

WHAT IS CLAIMED IS:

1. A method for updating the content of a set of data accessible by a server of a cluster system, comprising the steps of:

5 providing first and second servers;  
providing a network controller associated with each server, each network controller including a local power source and a local memory;  
storing in the local memory of each network controller a copy of a set of data; and  
performing a write operation to the memory of each network controller such that the  
10 content of the set of data of each network controller is the same.

2. The method for updating the content of a set of data accessible by a server of a cluster system of claim 1, wherein the first and second servers are geographically separate from one another.

3. The method for updating the content of a set of data accessible by a server of a cluster system of claim 1, wherein the set of data includes the metadata of the cluster system.

4. The method for updating the content of a set of data accessible by a server of a cluster system of claim 1, wherein the step of performing a write operation includes the step of transmitting  
20 an acknowledge signal to the other server following the completion of a successful write operation by a server.

5. The method for updating the content of a set of data accessible by a server of a cluster system of claim 4, wherein the write operation is atomic such that the results of the write operation  
25 are discarded in the event that an acknowledge signal is not received by each server.

6. The method for updating the content of a set of data accessible by a server of a cluster system of claim 1, wherein each network controller includes a local operating system for controlling communication between the network controllers.

5 7. The method for updating the content of a set of data accessible by a server of a cluster system of claim 1, wherein the step of performing a write operation comprises the steps of,  
determining at an initiating server that a write operation is to be performed;  
instruction a peer server to perform the write operation;  
performing the write operation at the peer server;  
transmitting a first write acknowledge signal from the peer server to the initiating  
server;  
receiving the first write acknowledge signal at the initiating server;  
performing the write operation at the initiating server;  
transmitting a second write acknowledge signal from the initiating server to the peer  
server; and  
receiving the second write acknowledge signal at the peer server.

8. The method for updating the content of a set of data accessible by a server of a cluster system of claim 7, further comprising the step of discarding the result of the write operation if the  
20 first and second write acknowledge signals are not received within a predefined time period.

9. A cluster system, comprising:

a first server including a network controller;

a second server including a network controller;

wherein the network controllers of the first and second servers each include a copy

5 of a set of data describing the status of the cluster system; and

wherein the network controllers are powered by a local power source such that the  
set of data is not lost upon an operational loss of the associated server.

10. The cluster of claim 9, wherein the first server and the second server are  
geographically separate from one another.

11. The cluster of claim 9, wherein each network controller includes a local operating  
system for controlling communication between the network controllers.

12. The cluster of claim 9, wherein the set of data is the metadata of the cluster system.

13. The cluster of claim 9,

wherein the first server and the second server are geographically separate from one  
another;

20 wherein each network controller includes a local operating system for controlling  
communication between the network controllers; and

wherein the set of data is the metadata of the cluster system.

14. A method for operating a cluster to preserve the operational integrity of the servers of the cluster system in the event of a failure to a server, the cluster having first and second servers coupled between one another at a network interface controller, comprising the steps of:

storing in the local memory of each network interface controller a copy of a set of data  
5 describing the operational status of the data served by the first and second servers;

providing to each of the network interface controllers of the first and second servers  
a local power source; and

wherein the network interface controllers are operable to communicate with one  
another to update the set of data despite the operation failure of at least one of the associated servers.

15. The method for operating a cluster of claim 14, wherein the first and second servers  
are geographically separated.

16. The method for operating a cluster of claim 14, wherein the set of data is metadata  
describing the data served by the first and second servers.

17. The method for operating a cluster of claim 14, wherein each of the first and second  
network interface controllers includes an operating system that permits the controllers to  
communicate with one another despite the operational failure of at least one of the associated servers.

18. The method for operating a cluster of claim 14, further comprising the step of making  
a change to the set of data by performing a write operation, wherein changes to the set of data are  
effected by performing a write operation to the memory of each network interface controller such  
that the content of the set of data of each network interface controller is the same.

19. The method for operating a cluster of claim 18, wherein the step of performing a write  
operation includes the step of transmitting an acknowledge signal to the other server following the  
completion of a successful write operation by a server.

20. The method for operating a cluster of claim 19, wherein the write operation is atomic such that the results of the write operation are discarded in the event that an acknowledge signal is not received by each server.

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